Final Office Action dated April 12, 1999, Applicant amends the application as follows:

IN THE CLAIMS:

Please Cancel Claims 11, 13, 14, 15, 32 and 33.

Please add new Claims 49-114 as follows:

49. (new) A universal power system utilizing a power controller capable of inputting multiple power sources, including at least one primary source of AC or DC electrical power of singular or variable voltage and at least one secondary power connection for processing external DC electrical power in service to at least one DC compatible load at its output, such as a lighting fixture requiring DC electrical power, said system comprising:

said power controller converting said primary AC or DC electrical power into a defined DC-regulated voltage used to provide and manage end-use service power;

said power controller having said at least one secondary power connection for processing at least one external alternative DC power source in readiness for service to said at least one DC compatible load; and,

said power controller having circuitry at said secondary power connection for combining said alternative DC power source with said voltage regulated DC voltage converted from said primary power source in service to said at least one DC compatible load.

50. (new) The universal power system of Claim 49 wherein said at least one secondary power connection comprises at least one first secondary power connection and at least one second secondary power connection.

51. (new) The universal power system of Claim 49 wherein said alternative DC power source is at least one external electrical storage medium such as a rechargeable storage battery, said at least one secondary connection for said electrical storage medium having circuitry for managing the state of charge for said electrical storage medium.

52. (new) The universal power system of Claim 49 wherein said alternative DC power source is at least one supplemental source of power capable of providing DC electricity.

53. (new) The universal power system of Claim 50 wherein said at least one alternative DC power source is an external electrical storage medium, such as a rechargeable storage battery, said at least one secondary connection for said electrical storage medium having circuitry for managing the state of charge for said electrical storage medium.

54. (new) The universal power system of Claim 50 wherein said second secondary alternative DC power source is at least one supplemental source of power capable of

providing DC electricity.

55. (new) The universal power system of Claim 50 wherein said first secondary alternative DC power source is at least one external electrical storage medium such as a rechargeable storage battery and said second secondary alternative DC power source is at least one supplemental source capable of providing DC electricity.

56. (new) The universal power system as in Claim 50 further comprising said power controller having, in the absence of said primary AC or DC electrical power source, circuitry for combining power from said at least one first secondary power connection and said at least one second secondary power connection in service to said at least one DC compatible load.

57. (new) The universal power system as in Claim 56 wherein said power system is a stand-alone power system capable of supporting end-use electrical loads in the absence of a central AC grid power source or any source at its primary input.

58. (new) The universal power system as in Claim 56 wherein said power system is a stand-alone power system capable of supporting end-use electrical loads in the absence of a central AC grid power source at it primary

input but with a local source of AC or DC power at its primary input.

59. (new) The universal power system as in Claim 50 wherein said power system is a solar-assisted power system wherein a source of AC or DC power is connected to said primary input and a external photovoltaic source of DC electrical power is connected to said second secondary input of said power controller in service to at least one DC load.

60. (new) The universal power system of Claim 49 wherein said universal power system is an un-interruptible power system, wherein if the primary source of AC or DC power connected to said primary input should fail, then at least one DC source of rechargeable electric storage is available and connected to said at least one secondary connection of said power controller in service to said DC load.

61. (new) The universal power system of Claim 50 wherein said universal power system is an un-interruptible power system, wherein if the primary source of AC or DC power connected to said primary input should fail, then at least one DC source of rechargeable electric storage is available and connected to said first secondary connection of said power controller in service to said DC load.

62. (new) The universal power system of Claim 50 wherein said power system is a solar electric power system of a first type, wherein further at least one rechargeable source of DC power is connected to said first secondary connection and a photovoltaic source of nominal DC voltage is connected to said second secondary connection of said power controller in service to said at least one DC load.

63. (new) The universal power system of Claim 50 wherein said power system is a solar electric power system of a second type wherein further a photovoltaic source of variable DC voltage is connected to said primary input of said power controller with at least one supplemental source of rechargeable DC power being connected to said first secondary connection with optional use of said second secondary connection.

64. (new) The universal power system of Claim 50 wherein said power system is a solar electric power system of a third type wherein further a least one rechargeable source of DC power is connected to said first secondary connection and a photovoltaic source of nominal DC voltage is connected to said second secondary connection of said power controller in service to a DC-to-AC line compatible inverter in order to support at least one conventional AC load.

65. (new) The power system of claim 64 wherein said power controller supports at its output a DC-to-AC line compatible inverter and at least one other DC load.

66. (new) The universal power system of Claim 50 wherein said power system is a solar electric power system of a fourth type wherein further a photovoltaic source of variable DC voltage is connected to said primary input of said power controller with at least one source of rechargeable DC power connected to said first secondary connection with optional use of said second secondary connection in service to a DC-to-AC line compatible inverter in order to support at least one conventional AC load.

67. (new) The power system of claim 66 wherein said power controller supports at its output a DC-to-AC line compatible inverter and at least one other DC load.

68. The universal power system as in Claim 50 wherein said power system includes a source of AC or DC power at said primary input and a fuel cell source of DC electrical power is connected to said second secondary connection.

69. (new) The universal power system of Claim 50 wherein said power system is a fuel cell power system of a first type, wherein further at least one rechargeable source

of DC power is connected to said first secondary connection and a fuel cell source of nominal DC voltage is connected to said second secondary connection of said power controller in service to said at least one DC load.

70. (new) The universal power system of Claim 50 wherein said power system is a fuel cell power system of a second type wherein further a fuel cell source of variable DC voltage is connected to said primary input of said power controller with at least one supplemental source of rechargeable DC power being connected to said first secondary connection with optional use of said second secondary connection.

71. (new) The universal power system of Claim 50 wherein said power system is a fuel cell power system of a third type wherein further a least one rechargeable source of DC power is connected to said first secondary connection and a fuel cell source of nominal DC voltage is connected to said second secondary connection of said power controller in service to a DC-to-AC line compatible inverter in order to support at least one conventional AC load.

72. (new) The power system of claim 71 wherein said power controller supports at its output a DC-to-AC line compatible inverter and at least one other DC load.

73. (new) The universal power system of Claim 50 wherein said power system is a fuel cell power system of a fourth type wherein further a fuel cell source of variable DC voltage is connected to said primary input of said power controller with at least one source of rechargeable DC power connected to said first secondary connection with optional use of said second secondary connection in service to a DC-to-AC line compatible inverter in order to support at least one conventional AC load.

74. (new) The power system of claim 73 wherein said power controller supports at its output a DC-to-AC line compatible inverter and at least one other DC load.

75. The universal power system as in Claim 50 wherein alternative power source is a cogenerator connected to said second secondary input of said power controller in service to said at least one DC load.

76. (new) The universal power system of Claim 50 wherein said power system is a cogenerator power system of a first type, wherein further at least one rechargeable source of DC power is connected to said first secondary connection and a cogenerator source of nominal DC voltage is connected to said second secondary connection of said power controller in service to said at least one DC load.

77. (new) The universal power system of Claim 50 wherein said power system is a cogenerator power system of a second type wherein further a cogenerator source of variable DC voltage is connected to said primary input of said power controller with at least one supplemental source of rechargeable DC power being connected to said first secondary connection with optional use of said second secondary connection.

78. (new) The universal power system of Claim 50 wherein said power system is a cogenerator power system of a third type wherein further a least one rechargeable source of DC power is connected to said first secondary connection and a cogenerator source of nominal DC voltage is connected to said second secondary connection of said power controller in service to a DC-to-AC line compatible inverter in order to support at least one conventional AC load.

79. (new) The power system of claim 75 wherein said power controller supports at its output a DC-to-AC line compatible inverter and at least one other DC load.

80. (new) The universal power system of Claim 50 wherein said power system is a cogenerator power system of a fourth type wherein further a cogenerator source of variable DC voltage is connected to said primary input of said power controller with at least one source of rechargeable DC power

connected to said first secondary connection with optional use of said second secondary connection in service to a DC-to-AC line compatible inverter in order to support at least one conventional AC load.

81. (new) The power system of claim 80 wherein said power controller supports at its output a DC-to-AC line compatible inverter and at least one other DC load.

82. The universal power system as in Claim 50 wherein alternative power source is an alternative DC power producing source device connected to said second secondary input of said power controller in service to said at least one DC load.

83. (new) The universal power system of Claim 50 wherein said power system is an alternative DC power producing source device of a first type, wherein further at least one rechargeable source of DC power is connected to said first secondary connection and an alternative DC power producing source device of nominal DC voltage is connected to said second secondary connection of said power controller in service to said at least one DC load.

84. (new) The universal power system of Claim 50 wherein said power system is an alternative DC power producing source device of a second type wherein further an

alternative DC power producing source device of variable DC voltage is connected to said primary input of said power controller with at least one supplemental source of rechargeable DC power being connected to said first secondary connection with optional use of said second secondary connection.

85. (new) The universal power system of Claim 50 wherein said power system is an alternative DC power producing source device of a third type wherein further a least one rechargeable source of DC power is connected to said first secondary connection and an alternative DC power producing source device of nominal DC voltage is connected to said second secondary connection of said power controller in service to a DC-to-AC line compatible inverter in order to support at least one conventional AC load.

86. (new) The power system of claim 75 wherein said power controller supports at its output a DC-to-AC line compatible inverter and at least one other DC load.

87. (new) The universal power system of Claim 50 wherein said power system is a cogenerator power system of a fourth type wherein further a cogenerator source of variable DC voltage is connected to said primary input of said power controller with at least one source of rechargeable DC power connected to said first secondary connection with optional

use of said second secondary connection in service to a DC-to-AC line compatible inverter in order to support at least one conventional AC load.

88. (new) The power system of claim 80 wherein said power controller supports at its output a DC-to-AC line compatible inverter and at least one other DC load.

89. (new) The universal power system of Claim 49 wherein said power system is a voltage regulated power system of higher quality wherein further said primary source of power is any naturally occurring variable voltage AC or DC source of power with optional use of at least one supplemental source of secondary power.

90. (new) The universal power system of Claim 50 wherein said power system is a voltage regulated power system of higher quality wherein further said primary source of power is any naturally occurring variable voltage AC or DC source of power with optional use of at least one supplemental source of secondary power.

91. (new) The universal power system of Claim 90 wherein said power system is a brown-out and over-voltage mitigating power system in service to end-use loads at its output, wherein further said system maintains a nominally constant voltage at its output with varying voltage at its

primary input to compensate for electrical conditions where there is a precipitous drop in line or source voltage, known as brown-outs, and/or an unstable upper and lower excursion of line voltage or source power at the primary input.

92. (new) The universal power system of Claim 49 wherein said primary source of power is an AC generator source of AC with optional use of said first and/or second secondary DC connection source of DC power.

93. The universal power system of Claim 92 wherein said AC generator is a gas-fueled generator.

94. The universal power system of Claim 92 wherein said AC generator is a cogenerator.

95. (new) The universal power system of Claim 49 wherein said primary source of power is an AC gas-fueled generator or a AC cogenerator or other conceivable source of AC with optional use of said first and/or second secondary DC input source of DC power.

96. (new) The universal power system of Claim 50 wherein said primary source of power is an AC gas-fueled generator or a AC cogenerator or other conceivable source of AC with optional use of said first and/or second secondary

DC input source of DC power.

97. (new) The universal power system of Claim 49 wherein said at least one DC load is any DC compatible load or loads such as lighting, office equipment, electronic devices, motor drive apparatus, DC-to-AC line inverter or any end-use device capable operating at the DC output voltage of said power controller.

98. (new) The universal power system of Claim 50 wherein said at least one DC load is any DC compatible load or loads such as lighting, office equipment, electronic devices, motor drive apparatus, DC-to-AC line inverter or any end-use device capable operating at the DC output voltage of said power controller.

99. (new) The universal power system of Claim 49 wherein said at least one DC load is a DC to AC 60hz inverter, wherein said power system is acceptable to devices that operate on standard AC line voltages at the output of said inverter.

100. (new) The universal power system of Claim 50 wherein said at least one DC load is a DC to AC 60hz inverter, wherein said power system is acceptable to devices that operate on standard AC line voltages at the output of the inverter.

101. (new) The universal power system of Claim 49 wherein said power system is a unitary and modular package, said package forming a building block which may be installed in incremental units for greater service capacity.

102. (new) The universal power system of Claim 50, wherein said power system is a unitary and modular package, said package forming a building block which may be installed in incremental units for greater service capacity.

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103. (new) The universal power system of Claim 101 wherein said power system is applied with outputs connected in series for greater voltage and power capacity.

104. (new) The universal power system of Claim 102 wherein said power system is applied with outputs connected in parallel for greater current capacity and power capacity thus for flexible building blocks.

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105. (new) The universal power system of Claim 101, wherein said unitary and modular package is connected in close physical proximity with individual output circuit legs to said loads, such as individual or grouped lighting fixtures, and remote from said primary AC or DC input power source connection, thus minimizing load-side voltage drops when said power controller's DC output voltage is operating

at relatively low output voltage; said at least one DC load leg comprising a plurality of DC load legs clustered around said modular universal power system.

106. (new) The universal power system of Claim 102, wherein said unitary and modular package is connected in close physical proximity with individual output circuit legs to said loads, such as individual or grouped lighting fixtures, and remote from said primary AC or DC input power source connection, thus minimizing load-side voltage drops when said power controller's DC output voltage is operating at relatively low output voltage; said at least one DC load leg comprising a plurality of DC load legs clustered around said modular universal power system.

107. (new) The universal power system of Claim 49, wherein said power system is an emergency lighting system in service to a lighting load with a source of primary power connected at the input and with a storable power source at said at least one secondary connection with circuitry to insure operation from the storage during primary power interruptions at said primary input.

108. (new) The universal power system of Claim 50, wherein said power system is an emergency lighting system in service to a lighting load with a source of primary power connected at the input and with a storable power source at

said first secondary connection with circuitry to insure operation from the storage during primary power interruptions at said primary input.

109. (new) The universal power system of Claim 101, wherein said power system is an emergency lighting system in service to a lighting load with a source of primary power connected at the input and with a storable power source at said at least one secondary connection with circuitry to insure operation from the storage during primary power interruptions at said primary input.

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110. The universal power system of Claim 102, wherein said power system is an emergency lighting system in service to a lighting load with a source of primary power connected at the input and with a storable power source at said first secondary connection with circuitry to insure operation from the storage during primary power interruptions at said primary input.

111. (new) The universal power system of Claim 49 wherein said power system is an emergency power system in service to any electrical load at its output, with or without an optional intermediate DC-to-AC 60 Hz line compatible inverter at said output, with a source of primary power connected at the input and a with a storable power

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source at said at least one secondary connection to insure operation during primary power interruptions.

112. (new) The universal power system of Claim 50 wherein said power system is an emergency power system in service to any electrical load at its output, with or without an optional intermediate DC-to-AC 60 Hz line compatible inverter at said output, with a source of primary power connected at the input and a with a storable power source at said first secondary connection to insure operation during primary power interruptions.

113. (new) The universal power system of Claim 101 wherein said power system is an emergency power system in service to any electrical load at its output, with or without an optional intermediate DC-to-AC 60 Hz line compatible inverter at said output, with a source of primary power connected at the input and a with a storable power source at said at least one secondary connection to insure operation during primary power interruptions.

114. (new) The universal power system of Claim 102 wherein said power system is an emergency power system in service to any electrical load at its output, with or without an optional intermediate DC-to-AC 60 Hz line compatible inverter at said output, with a source of primary power connected at the input and a with a storable power

source at said first secondary connection to insure operation during primary power interruptions.

Please amend Claims 1, 2, 3, 7, 9, 10, 16, 19, 22-24, 28, 30, 31, 36, 45, 46 and 48 as follows:

1. (Four Times Amended) A [high efficiency lighting] universal power system utilizing a first power control circuit including a primary AC or DC electrical power [from a grid] source of variable voltage for maintaining normal lighting conditions by at least one DC load, such as a lighting [fixtures] fixture [requiring] utilizing DC electrical power as its power source comprising:

a power controller receiving the primary AC or DC electrical power and delivering [required] voltage regulated DC electrical power to said [lighting fixtures;] DC load;

said power controller converting said AC electrical power to produce converted and voltage regulated DC electrical power;

[a rechargeable DC power source providing on a standby basis said required DC electrical power to said power controller;]

said power controller including a voltage regulator [receiving the voltage and the converted DC electrical power], said controller providing said voltage regulated DC power for said at least one DC load;

[said rechargeable DC power source being connected to said power controller for being maintained in a fully charged condition by said power controller during normal supply of AC electrical power from said grid source; and

said power controller delivering voltage regulated DC electrical power from said rechargeable DC power source to said lighting fixtures only during an AC electrical power outage to maintain without interruption normal lighting by said lighting fixtures]

said power controller having a second power control circuit for optionally connecting and maintaining a second power source such as an external rechargeable storage battery in readiness for service to said at least one lighting fixture;

said power controller having a third power control circuit for optionally connecting and proportionately combining a third power source such as an external alternative DC power source with said primary AC or DC power source[;], in service to said at least one DC load and said optional storage battery;

said power controller in the absence of the primary AC or DC electrical power source capable of combining power from said second power source and said third power source in service to said at least one DC load and to said second power said optional storage battery.

said power controller having a third power control circuit for proportionately combining at least one external

power source in service to said at least one lighting fixture and/or said optional storage battery.

2. (Three Times Amended) The [high efficiency lighting] universal power system of Claim 1 further comprising multiple power controllers [each connected to respective rechargeable DC power sources for maintaining lighting fixtures in a building with multiple rooms] in service to lighting loads greater than a predetermined capacity of said power controller.

3. (Twice Amended) The [high efficiency lighting] universal power system of Claim 1 further comprising a photovoltaic source of DC electrical power connected to said power [control means] controller for reducing the amount of AC electrical power taken from said [grid] primary AC or DC power source when said AC electrical power reaches a predetermined limit.

7. (Three Times Amended) The [high efficiency lighting] universal power system as in Claim 1, further comprising a DC power cogenerator [directly coupled to said lighting fixtures through a diode isolator allowing either AC or DC power to operate said lighting fixtures] connected to said first primary power source, said third power source or both said first primary power source and said third power source.

9. (Three Times Amended) [A] The [DC] universal power [supply] system as in Claim 1 for DC loads requiring DC electrical power further comprising:

said at least one DC load comprising a plurality of DC loads distributed throughout a building, each of said DC loads requiring DC electrical power for operations;

[a] said power controller receiving said AC electrical power from a grid source and delivering voltage regulated DC electrical power to said DC loads;

said power controller converting said AC electrical power to voltage regulated DC electrical power;

[a] said rechargeable DC power source providing on a standby basis said required voltage regulated DC electrical power through said power controller;

said rechargeable DC power source being connected to said voltage regulating power controller and being maintained in a fully charged condition by said power controller during normal supply of AC electrical power from said [grid] primary AC electrical power source;

said power controller delivering [voltage regulated] DC electrical power from said rechargeable DC power source to said DC loads during an [AC electrical power outage] an interruption from said primary first power source to maintain without interruption normal operation of the DC loads, and

said power controller also [delivering] directing said [required] DC electrical power from said rechargeable DC power source to said loads through a voltage change of said power controller.

said power controller also directing a fractional portion of said required electrical power to said DC loads from said rechargeable DC power source by means of a proportionate change in level of said regulated voltage provided by said power controller.

10. (Twice Amended) The [DC] universal power supply [high efficiency lighting] system of Claim [1] 9 [having] further comprising a photovoltaic source of DC electrical power connected to said power [control means] controller for reducing the amount of electrical power taken from said [grid] primary AC or DC power source.

16. (Amended) The [DC] universal power [supply] system as in Claim 9 wherein said at least one DC load is a [household appliance] at least one lighting fixture.

19. (Twice Amended) The [DC] universal power [supply] system as in Claim 13 wherein said DC at least one load is a household appliance.

22. (Three Times Amended) [A] The [high efficiency lighting] universal power system as in Claim 1 comprising:

said at least one DC load comprising a plurality of lighting fixtures distributed throughout a building, each of said fixtures requiring DC electrical power for operation,

[a voltage regulating power controller in a single location receiving AC electrical power from a grid source and converting said AC electrical power to voltage regulated DC electrical power, and means for distributing said DC electrical power to said lighting fixtures thereby obviating the need for converting AC to DC power at each of said lighting fixtures]

said power controller being in close proximity with said at least one DC load such that voltage drops in supporting cabling is minimized.

23. (Amended) The universal [lighting] power system of Claim 22 having a rechargeable DC power source providing on a standby basis said required DC electrical power to said power controller, during an AC electrical outage to maintain without interruption normal lighting by said lighting fixtures,

said rechargeable DC power source being connected to said power controller for being maintained in a fully charged condition by said power controller during normal supply of AC electrical power from said grid source, and supplying DC electrical power to said lighting fixtures when there is an AC power outage.

24. (Amended) A [high efficiency lighting] universal power system utilizing AC electrical power from a grid source for maintaining normal lighting conditions by lighting fixtures requiring DC electrical power comprising:

a voltage regulating power controller receiving AC electrical power from a grid source and delivering required low voltage DC electrical power to said lighting fixtures;

said power controller converting said AC electrical power to voltage regulated DC electrical power;

a rechargeable DC power source providing on a standby basis said required DC electrical power through said power controller when said AC electrical power reaches a predetermined threshold limit;

said rechargeable DC power source being connected to said power controller for being maintained in a fully charged condition by said power controller during normal supply of AC electrical power from said grid source; and

said voltage regulating power controller limiting said converted AC electrical power to DC electrical power when load requirements exceed said predetermined threshold limit, wherein said rechargeable DC power source provides any additional required DC electrical power.

28. (Amended) A [high efficiency lighting] universal power system for maintaining normal lighting conditions by lighting fixtures requiring DC electrical power comprising:

a power controller for receiving DC electrical power from a photovoltaic panel and delivering required DC electrical power to said lighting fixtures;

said power controller controlling charging of a rechargeable DC power source;

said rechargeable DC power source providing on a standby basis said required DC electrical power through said power controller;

said power controller including a regulator receiving the voltage and the DC electrical power, said controller providing voltage regulated DC power;

said rechargeable DC power source being connected to said power controller for being maintained in a charged condition by said power control means during hours of input from said photovoltaic panel, and

said power controller delivering said required DC electrical power from said rechargeable DC power source to said lighting fixtures during periods of time when power from said photovoltaic panel is not available.

30. (Once Amended) A [DC] universal power [supply] system for DC loads requiring DC electrical power comprising:

a power controller receiving DC electrical power from a stand alone DC power source not connected to a grid supplied AC electrical power source and delivering required DC electrical power to said DC load;

said power controller controlling charging of a rechargeable DC power source;

said rechargeable DC power source providing on a standby basis said required DC electrical power through said power controller;

said power controller including a regulator receiving the voltage and the DC electrical power, said controller providing voltage regulated DC power;

said rechargeable DC power source being connected to said power controller for being maintained in a fully charged condition by said power controller during hours of input from said DC power source, and

said power controller delivering said required DC electrical power from said rechargeable DC power source to said DC load during periods of time when power from said DC power supply is not available.

31. (Amended) The [DC] universal power [supply] system as in Claim [13] 9 wherein said second DC power source is a photovoltaic panel.

36. (Amended) A [high efficiency lighting] universal power system utilizing AC electrical power from a grid source for maintaining normal lighting conditions by lighting fixtures requiring DC electrical power comprising:

a power controller for receiving AC electrical power and delivering required DC electrical power to said lighting fixtures;

said power controller converting said AC electrical power to produce converted DC electrical power;

a rechargeable DC power source for providing on a standby basis said required DC electrical power to said power controller;

said power controller including a regulator receiving the voltage and the DC electrical power, said controller providing voltage regulated DC power;

said rechargeable DC power source being connected to said power controller for being maintained in a fully charged condition by said power controller during normal supply of AC electrical power from said grid source; and

said power controller delivering said required voltage regulated DC electrical power from said rechargeable DC power source to said lighting fixtures through a voltage change of said voltage regulating power controller.

45. (Twice Amended) The [high efficiency lighting] universal power system as in Claim 1 wherein said rechargeable DC second power source is a storage battery.

46. (Twice Amended) The [high efficiency lighting] universal power system as in Claim 1 wherein said

rechargeable DC second power source is a photovoltaic source of DC electrical power.

48. (Amended) [A] The [high efficiency lighting system] universal power system as in Claim 47 wherein said at least one DC load is a fluorescent lighting load and said second DC power [supplies are] source [are in the form of one of] is a storage battery and said third power source is and a photovoltaic panel.

The allowed Claims 4, 25-27, 29, 34, 35, 37-43 stand as follows:

4. (allowed). A high efficiency lighting system for lighting fixtures requiring DC electrical power comprising:

power control means for receiving AC electrical power from a grid source and delivering required DC electrical power to said lighting fixtures;

said power control means converting said AC electrical power to DC electrical power;

photovoltaic means for delivering DC electrical power through said power control means;

said power control means reducing the electrical power taken from said grid source by the amount of electrical power supplied by said photovoltaic means and

battery means for providing on a standby basis said required DC electrical power to said power control means,

said power control means maintaining said battery means in a fully charged condition by electrical power from said grid source.

25.(Allowed) A high efficiency lighting system for maintaining normal lighting conditions by lighting fixtures requiring DC electrical power comprising:

power control means for receiving AC electrical power from a grid source and delivering required DC electrical power to said lighting fixtures;

said power control means converting said AC electrical power to DC electrical power;

battery means for providing on a standby basis said required DC electrical power through said power control means;

said battery means being connected to said power control means for being maintained in a fully charged condition by said power control means during normal supply of AC electrical power from said grid source;

said power control means delivering said required DC electrical power from said battery means to said lighting fixtures during an AC electrical power outage to maintain without interruption normal lighting by said lighting fixtures; and,

a photovoltaic source of DC electrical power connected to said power control means for reducing the amount of electrical power taken from said grid source.

26. (Allowed) A high efficiency lighting system for lighting fixtures requiring DC electrical power comprising:

power control means for receiving AC electrical power from a grid source and delivering required DC electrical power to said lighting fixtures;

said power control means converting said AC electrical power to DC electrical power;

photovoltaic means for delivering DC electrical power through said power control means;

said power control means reducing the electrical power taken from said grid source by the amount of electrical power supplied by said photovoltaic means.

27. (Allowed) The high efficiency lighting system of Claim 26 having battery means for providing on a standby basis said required DC electrical power to said power control means, said power control means maintaining said battery means in a fully charged condition by electrical power from said grid source, for maintaining without interruption the normal lighting by said lighting fixtures during a power outage.

29. (Allowed) A DC power supply system for DC loads requiring DC electrical power comprising:

power control means for receiving AC electrical power from a grid source and delivering required DC electrical power to said DC load;

said power control means converting said AC electrical power to DC electrical power;

battery means for providing on a standby basis said required DC electrical power through said power control means;

said battery means being connected to said power control means for being maintained in a fully charged condition by said power control means during normal supply of AC electrical power from said grid source;

said power control means delivering said required DC electrical power from said battery means to said DC load during an AC electrical power outage to maintain without interruption normal operation of the DC load; and,

a photovoltaic source of DC electrical power connected to said power control means for reducing the amount of electrical power taken from said grid source.

34. (Allowed) A high efficiency lighting system for maintaining normal lighting conditions by lighting fixtures requiring DC electrical power comprising:

power control means for receiving AC electrical power from a grid source and delivering required DC electrical power to at least one DC load means;

said power control means converting said AC electrical power to DC electrical power;

battery means for providing on a standby basis said required DC electrical power through said power control means;

said battery means being connected to said power control means for being maintained in a fully charged condition by said power control means during normal supply of AC electrical power from said grid source;

said power control means limiting said converted AC electrical power to DC electrical power when said AC electrical power reaches a predetermined limit; wherein said battery means provides deficit any additional DC electrical power; and,

said power control means interconnecting a first DC power supply means, a second direct current power supply means and said at least one DC load means for operation in one of three modes,

first, a mode in which said first DC power supply means supplies all of the power for said at least one DC load means, and,

second, a mode in which said first DC power supply means and said second direct current power supply means share power to said at least one DC load means, and,

third, a mode in which said second direct current power supply means supplies all the power for said at least one DC load means.

35. (Allowed) The high efficiency lighting system as defined in claim 34 wherein said at least one DC load means is a fluorescent lighting load and said direct current supply means is in the form of storage battery means or photovoltaic panel means.

37. (Allowed) A high efficiency lighting system for maintaining normal lighting conditions by lighting fixtures requiring DC electrical power comprising:

a power controller receiving AC electrical power from a grid source and delivering required DC electrical power to said lighting fixtures, said power controller converting said AC electrical power to DC electrical power;

a rechargeable DC power source providing on a standby basis said required DC electrical power through said power controller;

said DC power source being connected to said power controller and being maintained in a fully charged condition by said power controller during normal supply of AC electrical power from said grid source;

said power controller delivering said required DC electrical power from said DC power source to said lighting fixtures during an AC electrical power outage to maintain without interruption normal lighting by said lighting fixtures; and

a photovoltaic source of DC electrical power connected to said power controller, said photovoltaic source reducing the amount of AC electrical power taken from said grid source.

38. (Allowed) The lighting system of claim 37 wherein said photovoltaic source is constructed to reduce the amount of AC electrical power taken from said grid source when said AC electrical power reaches a predetermined limit.

39. (Allowed) A high efficiency lighting system for lighting fixtures requiring DC electrical power comprising:

a power controller receiving AC electrical power from a grid source and delivering required DC electrical power to said lighting fixtures, said power controller converting said AC electrical power to DC electrical power;

a photovoltaic source of DC electrical power delivering DC electrical power through said power controller;

said power controller reducing the electrical power taken from said grid source by the amount of electrical power supplied by said photovoltaic source.

40. (Allowed) A high efficiency lighting system in accordance with claim 39, further comprising a rechargeable DC power source providing on a standby basis said required DC electrical power to said power controller, said power

controller maintaining said DC power source in fully charged condition by electrical power from said grid source.

41. (Allowed) A high efficiency lighting system in accordance with claim 40, wherein said power controller is constructed to utilize power from said DC power source to maintain without interruption the normal lighting by said lighting fixtures during a power outage.

42. (Allowed) A DC power supply system for DC loads requiring DC electrical power, comprising:

a power controller receiving AC electrical power from a grid source and delivering required DC electrical power to said lighting fixtures, said power controller converting said AC electrical power to DC electrical power;

a rechargeable DC power source providing on a standby basis said required DC electrical power through said power controller;

said DC power source being connected to said power controller and being maintained in a fully charged condition by said power controller during normal supply of AC electrical power from said grid source;

said power controller delivering said required DC electrical power from said DC power source to said lighting fixtures during an AC electrical power outage to maintain without interruption normal operation of the DC load; and

a photovoltaic source of DC electrical power connected to said power controller, said photovoltaic source reducing the amount of AC electrical power taken from said grid source.

43. (Allowed) A high efficiency lighting system for maintaining normal lighting conditions by lighting fixtures requiring DC electrical power comprising:

a power controller receiving AC electrical power from a grid source and delivering required DC electrical power to at least one DC load, said power controller converting said AC electrical power to DC electrical power;

a rechargeable DC power source providing on a standby basis said required DC electrical power through said power controller;

said DC power source being connected to said power controller and being maintained in a fully charged condition by said power controller during normal supply of AC electrical power from said grid source;

said power controller limiting the amount of AC electrical power converted to DC electrical power when said AC electrical power reaches a predetermined limit; said DC power source providing any deficit in required DC electrical power; and

said power controller interconnecting a first DC power supply, a second DC power supply and said at least one load, for operation in three modes;

a first mode in which said first DC power supply provides all of the power for said at least one load;

a second mode in which said first DC power supply and said second DC power supply share power to said at least one DC load; and,

a third, a mode in which said second DC power supply provides all the power for said at least one DC load means.

44. (unchanged) The high efficiency lighting system as in claim 43 wherein said at least one DC load is a fluorescent lighting load and said DC power supplies are in the form of one of a storage battery and a photovoltaic panel.

47. (Allowed) A high efficiency lighting system for maintaining normal lighting conditions by lighting fixtures requiring DC electrical power comprising:

a power controller receiving DC electrical power from a first DC power source and delivering required DC electrical power to at least one DC load;

a rechargeable second DC power source providing on a standby basis said required DC electrical power through said power controller;

said rechargeable second DC power source being connected to said power controller and being maintained in a fully charged condition by said power controller during